

AMENDMENTS TO THE CLAIMS:

Please amend claims 3-6, as listed in the following listing of the claims, which replaces all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Original) An electric wiring simulation device simulating characteristics of an electric wiring while the electric wiring is short-circuited, comprising:
 - a characteristics information data base for storing parts information on parts and wirings constituting a test object circuit, discharge characteristics of a power supply, current-prearcing time characteristics of protecting parts and current-smoke time characteristics of the wirings;
 - an assigned path searching unit for searching an assigned path between a short-circuit point and the power supply when the short-circuit point on the test object circuit is assigned;
 - a current value calculating unit for calculating a resistance value on the assigned path searched by the assigned path searching unit, and calculating a short-circuit current value based on the resistance value and the discharge characteristics of the power supply; and
 - a judging unit for judging whether each protecting part on the test object circuit is fused and whether each wiring of the assigned path smokes based on the short-circuit current value calculated by the current value calculating unit, the current-smoke time characteristics and the current-prearcing time characteristics, at unit time intervals.

2. (Original) An electric wiring simulation device according to claim 1,
wherein the current value calculating unit takes account of the resistance value
during heat emission based on a change in the resistance values with respect to time,
the resistance values included in the parts information.

3. (Currently Amended) A recording medium for recording a simulation program for
an electric wiring simulation device simulating characteristics of an electric wiring while
the electric wiring is short-circuited, the simulation program recorded on the recording
medium comprising:
a storage process processing for storing parts information on parts and wirings
constituting a test object circuit inputted as a simulation object, discharge characteristics
of a power supply, current-prearcing time characteristics of protecting parts and current-
smoking time characteristics of the wirings, in a data base;
an assigned path searching process processing for searching an assigned path
between a short-circuit point and the power supply when the short-circuit point is
assigned on the test object circuit;
a current value calculating process processing for calculating a resistance value
on the assigned path searched in the assigned path searching process processing, and
for calculating a short-circuit current value based on the resistance value and the
discharge characteristics of the power supply; and
a judging process processing for judging whether each protecting part on the
assigned path is fused and whether each wiring on the assigned path smokes based on

the short-circuit current value calculated in the current value calculating process-processing, the current-smoke time characteristics and the current-prearcing time characteristics, at unit time intervals.

4. (Currently Amended) A recording medium for recording a simulation program for an electric wiring simulation device simulating characteristics of an electric wiring according to claim 3,

wherein the current value calculating process processing is conducted while taking account of the resistance value during heat emission based on a change in the resistance values with respect to time, the resistance values included in the parts information.

5. (Currently Amended) A computer readable medium containing computer code for performing a simulation program for an electric wiring simulation device simulating characteristics of an electric wiring while the electric wiring is short-circuited, the computer code for performing a simulation program comprising:

a storage code segment for storing parts information on parts and wirings constituting a test object circuit inputted as a simulation object, discharge characteristics of a power supply, current-prearcing time characteristics of protecting parts and current-smoking time characteristics of the wirings, in a data base;

an assigned path searching code segment for searching an assigned path between a short-circuit point and the power supply when the short-circuit point is assigned on the test object circuit;

a current value calculating code segment for calculating a resistance value on the assigned path searched in the assigned path searching code segment, and for calculating a short-circuit current value based on the resistance value and the discharge characteristics of the power supply; and

a judging code segment for judging whether each protecting part on the assigned path is fused and whether each wiring on the assigned path smokes based on the short-circuit current value calculated in the current value calculating code segment, the current-smoke time characteristics and the current-prearcing time characteristics, at unit time intervals.

6. (Currently Amended) A computer readable medium containing computer code for performing a simulation program for an electric wiring simulation device simulating characteristics of an electric wiring while the electric wiring is short-circuited according to claim 5,

wherein the current value calculating code segment is conducted while taking account of the resistance value during heat emission based on a change in the resistance values with respect to time, the resistance values included in the parts information.